



SEQUENCE LISTING

```
<110> Khan, Nisean Father
Benner, Robert
<120> Gene regulator
<130> 2183-5223US
<140> 10/028,075
<141> 2001-12-21
<150> EP 01203748.7
```

<160> 175

<151> 2001-10-04

<170> PatentIn Ver. 2.1

<210> 1 <211> 4 <212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: oligopeptide

<400> 1 Leu Gln Gly Val 1

<210> 2 <211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: oligopeptide

<400> 2 Ala Gln Gly Val 1

<210> 3

```
<211> 6
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: oligopeptide
<400> 3
Val Leu Pro Ala Leu Pro
  1
                  5
<210> 4
<211> 16
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: swiss/p36507/MPK2 Human
<400> 4
Met Leu Ala Arg Arg Lys Pro Val Leu Pro Ala Leu Thr Ile Asn Pro
                                                           15
                                      10
  1
                  5
<210> 5
<211> 7
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: swiss/p36507/MPK2 Human
<400> 5
Met Leu Ala Arg Arg Lys Pro
<210> 6
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: swiss/p36507/MPK2 Human
<400> 6
```

```
Met Leu Ala Arg
  1
<210> 7
<211> 6
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: swiss/p36507/MPK2 Human
<400> 7
Val Leu Pro Ala Leu Thr
  1
<210> 8
<211> 5
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/1QMH/1QMH-A
<400> 8
Val Leu Pro Ala Leu
<210▶ 9
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/4NOS/4NOS-A
<400> 9
Phe Pro Gly Cys
  1
<210> 10
<211> 4
```

```
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Hs.297775.1
<400> 10
Pro Gly Cys Pro
  1
<210> 11
<211> 7
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      swiss/P81272/NS2B HUMAN
<400> 11
Gly Val Leu Pro Ala Val Pro
  1
<210> 12
<211> 6
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      swiss/P81272/NS2B HUMAN
<400> 12
Val Leu Pro Ala Val Pro
<210> 13
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/1FZV/1FZV-A
```

```
<400> 13
Pro Ala Val Pro
  1
<210> 14
<211> 9
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: oligopeptide
<400> 14
Leu Gln Gly Val Val Pro Arg Gly Val
  1
<210> 15
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: oligopeptide
<400> 15
Gly Val Val Pro
  1
<210> 16
<211> 5
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: oligopeptide
<400> 16
Val Pro Arg Gly Val
  1
<210> 17
<211> 4
```

```
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: oligopeptide
<400> 17
Pro Arg Gly Val
  1
<210> 18
<211> 5
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: polypeptide
<400> 18
Met Ala Pro Lys Lys
  1
<210> 19
<211> 4 ·
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: oligopeptide
<400> 19
Leu Gln Gly Ala
  1
<210> 20
<211> 10
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: oligopeptide
<400> 20
Val Leu Pro Ala Leu Pro Gln Val Cys
```

```
10
  1
<210> 21
<211> 6
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: oligopeptide
<400> 21
Ala Leu Pro Ala Leu Pro
<210> 22
<211> 6
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: oligopeptide
<400> 22
Val Ala Pro Ala Leu Pro
  1
<210> 23
<211> 7
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: oligopeptide
<400> 23
Ala Leu Pro Ala Leu Pro Gln
  1
<210> 24
<211> 7
<212> PRT
<213> Artificial Sequence
<220>
```

```
<223> Description of Artificial Sequence: oligopeptide
<400> 24
Val Leu Pro Ala Ala Pro Gln
  1
<210> 25
<211> 7
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: oligopeptide
<400> 25
Val Leu Pro Ala Leu Ala Gln
  1
<210> 26
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: oligopeptide
<400> 26
Leu Ala Gly Val
  1
<210> 27
<211> 6
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: oligopeptide
<400> 27
Val Leu Ala Ala Leu Pro
  1
                  5
<210> 28
<211> 6
<212> PRT
```

```
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: oligopeptide
<400> 28
Val Leu Pro Ala Leu Ala
                  5
  1
<210> 29
<211> 7
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: oligopeptide
<400> 29
Val Leu Pro Ala Leu Pro Gln
  1
<210> 30
<211> 7
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: oligopeptide
<400> 30
Val Leu Ala Ala Leu Pro Gln
  1
<210> 31
<211> 7
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: oligopeptide
<400> 31
Val Leu Pro Ala Leu Pro Ala
```

```
1
<210> 32
<211> 7
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: oligopeptide
<400> 32
Gly Val Leu Pro Ala Leu Pro
<210> 33
<211> 8
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: oligopeptide
<400> 33
Gly Val Leu Pro Ala Leu Pro Gln
<210> 34
<211> 13
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: oligopeptide
<400> 34
Leu Gln Gly Val Leu Pro Ala Leu Pro Gln Val Val Cys
                                      10
  1
<210> 35
<211> 38
<212> PRT
<213> Artificial Sequence
```

<220>

```
<400> 35
Val Val Cys Asn Tyr Arg Asp Val Arg Phe Glu Ser Ile Arg Leu Pro
                                      10
                                                           15
Gly Cys Pro Arg Gly Val Asn Pro Val Val Ser Tyr Ala Val Ala Leu
             20
                                  25
                                                       30
Ser Cys Gln Cys Ala Leu
         35
<210> 36
<211> 15
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: oligopeptide
<400> 36
Arg Pro Arg Cys Arg Pro Ile Asn Ala Thr Leu Ala Val Glu Lys
                                      10
  1
                                                           15
<210> 37
<211> 20
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: oligopeptide
<400> 37
Glu Gly Cys Pro Val Cys Ile Thr Val Asn Thr Thr Ile Cys Ala Gly
                                      10
  1
                                                           15
Tyr Cys Pro Thr
             20
<210> 38
<211> 18
<212> PRT
```

<223> Description of Artificial Sequence: oligopeptide

<213> Artificial Sequence

```
<220>
<223> Description of Artificial Sequence: oligopeptide
<400> 38
Ser Lys Ala Pro Pro Pro Ser Leu Pro Ser Pro Ser Arg Leu Pro Gly
                                      10
                                                           15
                   5
Pro Ser
<210> 39
<211> 16
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: oligopeptide
<400> 39
Ser Ile Arg Leu Pro Gly Cys Pro Arg Gly Val Asn Pro Val Val Ser
                                                           15
. 1
                                      10
                   5
<210> 40
<211> 13
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: oligopeptide
<400> 40
Leu Pro Gly Cys Pro Arg Gly Val Asn Pro Val Val Ser
                                      10
  1
<210> 41
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: oligopeptide
<400> 41
Leu Pro Gly Cys
```

```
1
<210> 42
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: oligopeptide
<400> 42
Met Thr Arg Val
  1
<210> 43
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: oligopeptide
<400> 43
Gln Val Val Cys
  1
<210> 44
<211> 17
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: peptide
      signalling molecule
<400> 44
Met Thr Arg Val Leu Gln Gly Val Leu Pro Ala Leu Pro Gln Val Val
                  5
                                      10
                                                           15
  1
```

Cys

<210> 45

<211> 35

<212> PRT

```
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: peptide
      signalling molecule
<400> 45
Arg Pro Arg Cys Arg Pro Ile Asn Ala Thr Leu Ala Val Glu Lys Glu
                                      10
                                                           15
  1
Gly Cys Pro Val Cys Ile Thr Val Asn Thr Thr Ile Cys Ala Gly Tyr
                                  25
             20
                                                       30
Cys Pro Thr
         35
<210> 46
<211> 21
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: peptide
      signalling molecule
<400> 46
Cys Ala Leu Cys Arg Arg Ser Thr Thr Asp Cys Gly Gly Pro Lys Asp
                                                           15
                                      10
                  5
  1
His Pro Leu Thr Cys
             20
<210> 47
<211> 18
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: peptide
      signalling molecule
<400> 47
Cys Arg Arg Ser Thr Thr Asp Cys Gly Gly Pro Lys Asp His Pro Leu
```

5

1

10

15

```
Thr Cys
<210> 48
<211> 37
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: peptide
      signalling molecule
<400> 48
Thr Cys Asp Asp Pro Arg Phe Gln Asp Ser Ser Ser Ser Lys Ala Pro
  1
                   5
                                      10
                                                           15
Pro Pro Ser Leu Pro Ser Pro Ser Arg Leu Pro Gly Pro Ser Asp Thr
             20
                                  25
                                                       30
Pro Ile Leu Pro Gln
         35
<210> 49
<211> 10
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: peptide
      signalling molecule
<400> 49
Leu Gln Gly Val Leu Pro Ala Leu Pro Gln
                                      10
<210> 50
<211> 10
<212> PRT
<213> Artificial Sequence
<220>
```

<223> Description of Artificial Sequence: NMPF peptide

```
<400> 50
Cys Pro Arg Gly Val Asn Pro Val Val Ser
  1
                                       10
<210> 51
<211> 25
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: probe to
      represent the NF-kappaB binding sequence
<400> 51
agctcagagg gggactttcc gagag
                                            25
<210> 52
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: peptide LQAV
      showed smaller infarcted area
<400> 52
Leu Gln Ala Val
  1
<210> 53
<211> 5
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/1DE7/1DE7-A
<400> 53
Leu Gln Gly Val Val
  1
<210> 54
<211> 6
```

```
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/1DE7/1DE7-A
<400> 54
Leu Gln Gly Val Val Pro
                  5
  1
<210> 55
<211> 5
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/1DL6/1DL6-A
<400> 55
Leu Asp Ala Leu Pro
  1
<210> 56
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/1QMH/1QMH-A
<400> 56
Leu Gln Thr Val
  1
<210> 57
<211> 10
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
```

pdb/1QMH/1QMH-A

```
<400> 57
Leu Val Leu Gln Thr Val Leu Pro Ala Leu
                                      10
  1
<210> 58
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: pdb/1LYP/1LYP
<400> 58
Ile Gln Gly Leu
  1
<210> 59
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: pdb/1LYP/1LYP
<400> 59
Leu Pro Lys Leu
  1
<210> 60
<211> 5
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: pdb/1LYP/1LYP
<400> 60
Leu Leu Pro Lys Leu
  1
<210> 61
<211> 4
```

```
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/1B90/1B90-A
<400> 61
Leu Pro Glu Leu
  1
<210> 62
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/1GLU/1GLU-A
<400> 62
Pro Ala Arg Pro
  1
<210> 63
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/2KIN/2KIN-B
<400> 63
Met Thr Arg Ile
  1
<210> 64
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
```

```
<223> Description of Artificial Sequence:
      pdb/1SMP/1SMP-I
 <400> 64
Leu Gln Lys Leu
  1
<210> 65
<211> 5
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/1SMP/1SMP-I
<400> 65
Leu Gln Lys Leu Leu
  1
<210> 66
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/1SMP/1SMP-I
<400> 66
Pro Glu Ala Pro
  1
<210> 67
<211> 9
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
     pdb/1SMP/1SMP-I
```

```
<400> 67
Leu Gln Lys Leu Leu Pro Glu Ala Pro
  1
<210> 68
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: pdb/1ES/1ES7-B
<400> 68
Pro Thr Leu Pro
  1
<210> 69
<211> 5
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: pdb/1ES/1ES7-B
<400> 69
Leu Gln Pro Thr Leu
  1
<210> 70
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/1BHX/1BHX-F
<400> 70
Leu Gln Val Val
  1
<210> 71
<211> 4
<212> PRT
```

```
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/1VCB/1VCB-A
<400> 71
Pro Glu Leu Pro
  1
<210> 72
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/1CQK/1CQK-A
<400> 72
Pro Ala Ala Pro
  1
<210> 73
<211> 5
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/1CQK/1CQK-A
<400> 73
Pro Ala Ala Pro Gln
<210> 74
<211> 6
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
     pdb/1CQK/1CQK-A
```

```
<400> 74
Pro Ala Ala Pro Gln Val
  1
<210> 75
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: pdb/1BFB/1BFB
<400> 75
Leu Pro Ala Leu
  1
<210> 76
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: pdb/1BFB/1BFB
<400> 76
Pro Ala Leu Pro
  1
<210> 77
<211> 5
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: pdb/1BFB/1BFB
<400> 77
Pro Ala Leu Pro Glu
 1
                  5
<210> 78
<211> 5
<212> PRT
```

```
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/1R2A/1R2A-A
<400> 78
Leu Thr Glu Leu Leu
  1
<210> 79
<211> 10
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: C3G peptide
<400> 79
Pro Pro Pro Ala Leu Pro Pro Lys Lys Arg
                                      10
                  5
  1
<210> 80
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/1RLQ/1RLQ-R
<400> 80
Leu Pro Pro Leu
  1
<210> 81
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/1RLQ/1RLQ-R; swissnew/P01229/LSHB HUMAN
```

```
<400> 81
 Pro Pro Leu Pro
   1
 <210> 82
 <211> 4
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: pdb/1TNT/1TNT
 <400> 82
 Leu Pro Gly Leu
   1
 <210> 83
 <211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/1GJS/1GJS-A
<400> 83
Leu Ala Ala Leu
  1
<210> 84
<211> 5
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/1GJS/1GJS-A
<400> 84
Leu Ala Ala Leu Pro
```

```
<210> 85
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/1GBR/1GBR-B
<400> 85
Pro Lys Leu Pro
  1
<210> 86
<211> 6
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/1A78/1A78-A
<400> 86
Val Leu Pro Ser Ile Pro
  1
<210> 87
<211> 6
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/1FZV/1FZV-A
<400> 87
Met Leu Pro Ala Val Pro
  1
                   5
```

<210> 88 <211> 4

```
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: pdb/1JLI/1JLI
<400> 88
Leu Pro Cys Leu
  1
<210> 89
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: pdb/1JLI/1JLI
<400> 89
Pro Cys Leu Pro
  1
<210> 90
<211> 5
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/1HSS/1HSS-A
<400> 90
Val Pro Ala Leu Pro
  1
<210> 91
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/1PRX/1PRX-A
```

```
<400> 91
Pro Thr Ile Pro
  1
<210> 92
<211> 6
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/1PRX/1PRX-A
<400> 92
Val Leu Pro Thr Ile Pro
  1
<210> 93
<211> 6
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: pdb/1RCY/1RCY
<400> 93
Val Leu Pro Gly Phe Pro
  1
                  5
<210> 94
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: pdb/1A3Z/1A3Z
<400> 94
Pro Gly Phe Pro
  1
<210> 95
<211> 5
<212> PRT
```

```
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/1GER/1GER-A
<400> 95
Leu Pro Ala Leu Pro
  1
<210> 96
<211> 5
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: pdb/1BBS/1BBS
<400> 96
Met Pro Ala Leu Pro
  1
<210> 97
<211> 17
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: AI188872
<220>
<221> MISC_FEATURE
<222> (2)
<223> The 'Xaa' at position 2 may be any amino acid
<400> 97
Met Xaa Arg Val Leu Gln Gly Val Leu Pro Ala Leu Pro Gln Val Val
  1
                                      10
                                                           15
Cys
```

<210> 98

```
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: AI188872
<220>
<221> MISC_FEATURE
<222> (2)
<223> The 'Xaa' at position 2 may be any amino acid
<400> 98
Met Xaa Arg Val
  1
<210> 99
<211> 17
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: AI126906
<400> 99
Ile Thr Arg Val Met Gln Gly Val Ile Pro Ala Leu Pro Gln Val Val
                                                           15
                                      10
  1
Cys
<210> 100
<211> 16
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: AI221581
<400> 100
Met Thr Arg Val Leu Gln Val Val Leu Leu Ala Leu Pro Gln Leu Val
                                                           15
                                      10
  1
<210> 101
```

```
<211> 14
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Mm.42246.3
 <400> 101
 Lys Val Ile Gln Gly Ser Leu Asp Ser Leu Pro Gln Ala Val
                                       10
 <210> 102
 <211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Mm.42246.3
<400> 102
Leu Asp Ser Leu
  1
<210> 103
<211> 11
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Mm.22430.1
<400> 103
Val Leu Gln Ala Ile Leu Pro Ser Ala Pro Gln
  1
                   5
                                      10
<210> 104
<211> 5
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Mm.22430.1
<400> 104
```

```
Leu Gln Ala Ile Leu
  1
<210> 105
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Mm.22430.1
<400> 105
Pro Ser Ala Pro
  1
<210> 106
<211> 14
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Hs.63758.4
<400> 106
Lys Val Leu Gln Gly Arg Leu Pro Ala Val Ala Gln Ala Val
                                      10
  1
<210> 107
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Hs.63758.4
<400> 107
Leu Pro Ala Val
  1
<210> 108
<211> 14
<212> PRT
<213> Artificial Sequence
```

```
<220>
<223> Description of Artificial Sequence: Mm.129320.2
<400> 108
Leu Val Gln Lys Val Val Pro Met Leu Pro Arg Leu Leu Cys
                                      10
                   5
  1
<210> 109
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Mm.129320.2
<400> 109
Leu Pro Arg Leu
  1
<210> 110
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Mm.129320.2
<400> 110
Pro Met Leu Pro
<210> 111
<211> 5
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Mm.22430.1
<400> 111
Pro Ser Ala Pro Gln
  1
<210> 112
```

```
<211> 11
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: P20155
<400> 112
Leu Pro Gly Cys Pro Arg His Phe Asn Pro Val
  1
                                      10
                  5
<210> 113
<211> 11
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Rn.2337.1
<400> 113
Leu Val Gly Cys Pro Arg Asp Tyr Asp Pro Val
                                      10
  1
                  5
<210> 114
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Rn.2337.1
<400> 114
Leu Val Gly Cys
  1
<210> 115
<211> 6
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Hs.297775.1
```

```
<400> 115
Pro Gly Cys Pro Arg Gly
<210> 116
<211> 5
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Mm.1359.1
<400> 116
Leu Pro Gly Cys Pro
  1
<210> 117
<211> 6
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      sptrembl/056177/056177
<400> 117
Val Leu Pro Ala Ala Pro
<210> 118
<211> 9
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      sptremb1/Q9W234/Q9W234
<400> 118
Leu Ala Gly Thr Ile Pro Ala Thr Pro
  1
```

```
<210> 119
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      sptrembl/Q9W234/Q9W234
<400> 119
Pro Ala Thr Pro
  1
<210> 120
<211> 7
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      sptrembl/Q9IYZ3/Q9IYZ3
<400> 120
Gly Leu Leu Pro Cys Leu Pro
  1
<210> 121
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      sptrembl/Q9PVW5/Q9PVW5
<400> 121
Pro Gly Ala Pro
 1
<210> 122
<211> 10
<212> PRT
```

```
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      sptrembl/Q9PVW5/Q9PVW5
<400> 122
Leu Pro Gln Arg Pro Arg Gly Pro Asn Pro
  1
                                      10
<210> 123
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      sptrembl/Q9PVW5/Q9PVW5
<400> 123
Pro Arg Gly Pro
  1
<210> 124
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Hs.303116.2
<400> 124
Gly Cys Pro Arg
<210> 125
<211> 6
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
     pdb/1DU3/1DU3-A
```

```
<400> 125
Gly Cys Pro Arg Gly Met
  1
                   5
<210> 126
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: pdb/1BIO/1BIO
<400> 126
Leu Gln His Val
  1
<210> 127
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/1FL7/1FL7-B
<400> 127
Val Pro Gly Cys
  1
<210> 128
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      pdb/1HR6/1HR6-A
<400> 128
Cys Pro Arg Gly
  1
<210> 129
<211> 4
```

```
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:pdb/1H6/1HR6-A
<400> 129
Leu Lys Gly Cys
  1
<210> 130
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: pdb/1BFA/1BFA
<400> 130
Pro Pro Gly Pro
  1
<210> 131
<211> 8
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: pdb/1BFA/1BFA
<400> 131
Leu Pro Gly Cys Pro Arg Glu Val
<210> 132
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: pdb/1BFA/1BFA
<400> 132
Cys Pro Arg Glu
```

```
1
<210> 133
<211> 17
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      swissnew/P01229/LSHB HUMAN
<400> 133
Met Met Arg Val Leu Gln Ala Val Leu Pro Pro Leu Pro Gln Val Val
                                      10
  1
Cys
<210> 134
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      swissnew/P01229/LSHB HUMAN
<400> 134
Met Met Arg Val
  1
<210> 135
<211> 6
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      swissnew/P01229/LSHB HUMAN
<400> 135
```

<210> 136 <211> 7

1

Val Leu Pro Pro Leu Pro

5

15

```
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      swissnew/P01229/LSHB HUMAN
<400> 136
Val Leu Pro Pro Leu Pro Gln
  1
<210> 137
<211> 7
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      swissnew/P01229/LSHB HUMAN
<400> 137
Ala Val Leu Pro Pro Leu Pro
  1
<210> 138
<211> 8
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      swissnew/P01229/LSHB HUMAN
<400> 138
Ala Val Leu Pro Pro Leu Pro Gln
<210> 139
<211> 17
<212> PRT
<213> Artificial Sequence
```

<220>

```
<223> Description of Artificial Sequence:
      swissnew/P07434/CGHB PAPAN
<400> 139
Met Met Arg Val Leu Gln Ala Val Leu Pro Pro Val Pro Gln Val Val
                                       10
                                                           15
Cys
<210> 140
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      swissnew/P07434/CGHB PAPAN
<400> 140
Leu Gln Ala Gly
  1
<210> 141
<211> 6
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      swissnew/P07434/CGHB PAPAN
<400> 141
Val Leu Pro Pro Val Pro
  1
<210> 142
<211> 7
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
```

swissnew/P07434/CGHB PAPAN

```
<400> 142
Val Leu Pro Pro Val Pro Gln
  1
<210> 143
<211> 7
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      swissnew/P07434/CGHB PAPAN
<400> 143
Ala Val Leu Pro Pro Val Pro
  1
<210> 144
<211> 8
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      swissnew/P07434/CGHB PAPAN
<400> 144
Ala Val Leu Pro Pro Val Pro Gln
<210> 145
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      swissnew/Q28376/TSHB HORSE
<400> 145
Met Thr Arg Asp
```

```
<210> 146
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      swissnew/Q28376/TSHB HORSE
<400> 146
Gln Asp Val Cys
  1
<210> 147
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      swissnew/Q28376/TSHB HORSE
<400> 147
Ile Pro Gly Cys
  1
<210> 148
<211> 5
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      sptremb1/Q9Z284/Q9Z284
<400> 148
Pro Ala Leu Pro Ser
  1
<210> 149
<211> 6
<212> PRT
```

```
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      sptrembl/Q9UCG8/Q9UCG8
<400> 149
Leu Pro Gly Gly Pro Arg
  1
<210> 150
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      sptrembl/Q9UCG8/Q9UCG8
<400> 150
Leu Pro Gly Gly
  1
<210> 151
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:
      sptrembl/Q9UCG8/Q9UCG8
<400> 151
Gly Gly Pro Arg
  1
<210> 152
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
```

```
<223> Description of Artificial Sequence: XP_028754
<400> 152
Leu Gln Arg Gly
  1
<210> 153
<211> 5
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: XP_028754
<400> 153
Leu Gln Arg Gly Val
  1
<210> 154
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: XP_028754
<400> 154
Leu Gly Gln Leu
  1
<210> 155
<211> 13
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: SignalP (CBS)
<400> 155
Met Thr Arg Val Leu Gln Gly Val Leu Pro Ala Leu Pro
                                      10
  1
<210> 156
<211> 9
```

```
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: HLA molecule
      type I (A_0201)
<400> 156
Val Leu Gln Gly Val Leu Pro Ala Leu
  1
<210> 157
<211> 9
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: HLA molecule
      type I (A_0201)
<400> 157
Gly Val Leu Pro Ala Leu Pro Gln Val
  1
<210> 158
<211> 9
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: HLA molecule
      type I (A_0201)
<400> 158
Val Leu Pro Ala Leu Pro Gln Val Val
  1
<210> 159
<211> 9
<212> PRT
<213> Artificial Sequence
```

```
<220>
<223> Description of Artificial Sequence: HLA molecule
      type I (A_0201)
<400> 159
Arg Leu Pro Gly Cys Pro Arg Gly Val
<210> 160
<211> 9
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: HLA molecule
      type I (A 0201)
<400> 160
Thr Met Thr Arg Val Leu Gln Gly Val
  1
                   5
<210> 161
<211> 15
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: MHC II (H2-Ak
      15-mers)
<400> 161
Cys Pro Thr Met Thr Arg Val Leu Gln Gly Val Leu Pro Ala Leu
                  5
  1
                                                           15
                                      10
<210> 162
<211> 15
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: MHC II (H2-Ak
      15-mers)
<400> 162
```

```
<210> 163
<211> 15
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: HLA-DRB1*0101
      15-mers
<400> 163
Pro Arg Gly Val Asn Pro Val Val Ser Tyr Ala Val Ala Leu Ser
                                      10
                                                           15
  1
<210> 164
<211> 15
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: HLA-DRB1*0101
      15-mers
<400> 164
Thr Arg Val Leu Gln Gly Val Leu Pro Ala Leu Pro Gln Val Val
                                                           15
  1
                                      10
                  5
<210> 165
<211> 15
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: HLA-DRB1*0101
      15-mers
<400> 165
Leu Gln Gly Val Leu Pro Ala Leu Pro Gln Val Val Cys Asn Tyr
                                      10
                                                           15
```

Pro Gly Cys Pro Arg Gly Val Asn Pro Val Val Ser Tyr Ala Val

10

15

```
<210> 166
 <211> 15
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: HLA-DRB1*0301
       (DR17) 15-mers
 <400> 166
 Met Thr Arg Val Leu Gln Gly Val Leu Pro Ala Leu Pro Gln Val
                                       10
                                                            15
   1
 <210> 167
 <211> 15
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: HLA-DRB1*0301
       (DR17) 15-mers
 <400> 167
 Ser Ile Arg Leu Pro Gly Cys Pro Arg Gly Val Asn Pro Val Val
                                                            15
                                       10
   1
 <210> 168
 <211> 7
 <212> PRT
 <213> Artificial Sequence
<220>
 <223> Description of Artificial Sequence: NMPF-56
       peptide
 <400> 168
 Val Ala Pro Ala Leu Pro Gln
   1
 <210> 169
 <211> 35
 <212> PRT
 <213> Artificial Sequence
```

```
<220>
<223> Description of Artificial Sequence: NMPF-62
      peptide
<400> 169
Val Val Cys Asn Tyr Arg Asp Val Arg Phe Glu Ser Ile Arg Leu Pro
                                                           15
                                      10
  1
                  5
Gly Cys Pro Arg Gly Val Asn Pro Val Val Ser Tyr Ala Val Ala Leu
                                                       30
                                  25
             20
Ser Cys Gln
         35
<210> 170
<211> 7
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: NMPF-67
      peptide
<400> 170
Cys Pro Arg Gly Val Asn Pro
  1
<210> 171
<211> 14
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: NMPF-70
      peptide
<400> 171
Met Thr Arg Val Leu Gln Gly Val Leu Pro Ala Leu Pro Gln
                                      10
  1
                  5
<210> 172
<211> 18
```

<212> PRT

```
<213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: NMPF-75
       peptide
 <400> 172
 Ser Lys Ala Pro Pro Pro Ser Leu Pro Ser Pro Ser Arg Leu Pro Gly
   1
                                       10
                                                            15
Pro Cys
<210> 173
<211> 7
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: NMPF-56
      peptide
<400> 173
Val Ala Pro Ala Leu Pro Gln
  1
<210> 174
<211> 17
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: NMPF-71
      peptide
<400> 174
Met Thr Arg Val Leu Pro Gly Val Leu Pro Ala Leu Pro Gln Val Val
  1
                  5
                                      10
                                                           15
Cys
<210> 175
```

```
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: NMPF peptide

<400> 175
Cys Arg Gly Val Asn Pro Val Val Ser

1 5
```

Con Mayor